

## ABSTRACT

5       Methods for improved cable modem ranging in a data-over-cable system. One method includes receiving a value that characterizes how equipment in the network is configured. Using this characteristic value, a cable modem may estimate loss in its upstream path from a measurement of a downstream signal and thereby estimate its initial transmit level during ranging. Launching at a proper initial transmit level may ensure that range request messages  
10 arrive at the cable modem termination system with sufficient strength to be detected and hence ameliorate ranging. Another method collects difference between these estimated initial transmit levels and the final transmit levels that succeeded in evoking a response from the cable modem termination system. The collected differences are analyzed and the result of the analysis is passed to cable modems to adjust their estimated initial transmit levels. These methods may  
15 shorten a cable modem's time for ranging and may decrease collisions on the upstream path when many cable modems try to range simultaneously.